

ABSTRACT

A method and system for providing a magnetic element that can be used in a magnetic memory is disclosed. The magnetic element includes pinned, nonmagnetic spacer, and free layers. The spacer layer resides between the pinned and free layers. The free layer can be switched using spin transfer when a write current is passed through the magnetic element. The magnetic element may also include a barrier layer, a second pinned layer. Alternatively, second pinned and second spacer layers and a second free layer magnetostatically coupled to the free layer are included. In one aspect, the free layer(s) include ferromagnetic material(s) diluted with nonmagnetic material(s) and/or ferrimagnetically doped to provide low saturation magnetization(s).